

ULTRA-THIN CHANNEL DEVICE WITH RAISED SOURCE AND DRAIN AND SOLID SOURCE EXTENSION DOPING

Abstract

4FIS920030093US1The inventive method for forming thin channel MOSFETS comprises: providing a structure including at least a substrate having a layer of semiconducting material atop an insulating layer and a gate region formed atop the layer of semiconducting material; forming a conformal oxide film atop the structure; implanting the conformal oxide film; forming a set of spacers atop the conformal oxide film, said set of sidewall spacers are adjacent to the gate region; removing portions of the oxide film, not protected by the set of spacers to expose a region of the semiconducting material; forming raised source/drain regions on the exposed region of the semiconducting material; implanting the raised source/drain regions with a second dopant impurity to form a second dopant impurity region; and annealing a final structure to provide a thin channel MOSFET.